IN THE CLAIMS:

Please amend claims 1, 13, and 17-18 as follows. Please add new claims 19-25.

1. (Currently Amended) A computer-implemented method for producing a trained clustering system, the method comprising:

processing data arrays that collectively describe cyclic behavior of at least one variable in several entities in a telecommunication network;

wherein said processing of the data arrays comprises

determining a first cycle in the cyclic behavior and dividing the first cycle into multiple time slots;

determining multiple data arrays, each data array containing multiple data items such that each data item describes a variable of an entity in one time slot;

for each of the several entities, determining a specific magnitude parameter; and

scaling the data arrays between entities such that the specific magnitude parameters are suppressed;

wherein the method further comprises training a clustering system with a first plurality of the scaled data arrays to determine a set of cluster centers, thereby producing the trained clustering system~~; and using the trained clustering system~~ operable to cluster a second plurality of the scaled data arrays, whereby the second plurality of the scaled data arrays clustered by the trained clustering system may differ in magnitude from the

first plurality of the scaled data arrays used for training the clustering system

~~wherein the method further comprises processing data arrays that collectively describe cyclic behavior of at least one variable in several entities in a physical process to obtain the second plurality of the scaled data arrays, and using the second plurality of the scaled data arrays to determine at least one condition~~.

2. (Previously Presented) The method according to claim 1, wherein the specific magnitude parameters are determined separately for each first cycle.

3. (Previously Presented) The method according to claim 1, further comprising determining a second cycle that is a multiple of the first cycle and re-clustering the clustered data arrays in respect of the second cycle.

4. (Previously Presented) The method according to claim 1, further comprising processing the suppressed specific magnitude parameter separately from the clustering system.

5. (Previously Presented) The method according to claim 1, wherein the clustering system is an unsupervised clustering system.

6. (Previously Presented) The method according to claim 5, further comprising initializing the unsupervised clustering system with a-priori seed values prior to said training.

7. (Previously Presented) The method according to claim 1, further comprising:

associating predetermined confidence interval with the cluster centers;

for each clustered data array of the second plurality, determining a best-matching cluster center and checking if the clustered data array is within said predetermined confidence interval of the best-matching cluster center;

if the clustered data array is within said predetermined confidence interval of the best-matching cluster center, archiving an indicator of the best-matching cluster center and discarding the data array in question; or

if the clustered data array is within said predetermined confidence interval of the best-matching cluster center, archiving data items of the data array for those time slots in which the clustered data array is not said within said predetermined confidence interval.

8. (Previously Presented) The method according to claim 7, wherein the confidence interval narrows progressively with increasing magnitude parameter of the variable described.

9. (Previously Presented) The method according to claim 1, further comprising using the clustered second plurality of the scaled data arrays to detect anomalous situations.

10. (Previously Presented) The method according to claim 1, further comprising using the clustered second plurality of the scaled data arrays to determine a pricing strategy.

11. (Previously Presented) The method according to claim 1, wherein the scaled data arrays represent usage of services by various subscribers, and the method further comprises using the clustered second plurality of the scaled data arrays to select candidate subscribers for service advertising.

12. (Previously Presented) The method according to claim 1, wherein said several entities are network resources and the method further comprises:

using the scaled data arrays to determine a set of optimized operating parameters for a network resource; and

copying the optimized operating parameters to another network resource.

13. (Currently Amended) A computer program product embodied on a computer readable medium, the computer program product comprising program code for controlling a processor to execute a method, the method comprising:

receiving multiple data arrays, each data array containing multiple data items such that each data item describes a variable of an entity in one time slot;

determining a specific magnitude parameter for each of the several entities;

scaling the data arrays between entities such that the specific magnitude parameters are suppressed;

training a clustering system with a first plurality of the scaled data arrays, to determine a set of cluster centers; and

clustering a second plurality of the scaled data arrays with the trained clustering

system,

wherein the method further comprises processing data arrays that collectively describe cyclic behavior of at least one variable in several entities in a ~~physical process~~ telecommunication network to obtain the second plurality of the scaled data arrays, and using the second plurality of the scaled data arrays to determine at least one condition, wherein the cyclic behavior exhibits at least a repeating first cycle and each first cycle comprises multiple time slots.

14. (Previously Presented) The computer program product according to claim 13, wherein a magnitude-determination routine is operable to determine the specific magnitude parameters separately for each first cycle.

15. (Previously Presented) The computer program product according to claim 13, further comprising processing the suppressed specific magnitude parameter separately from the clustering system.

16. (Previously Presented) The computer program product according to claim 13, further comprising an archival routine operable:

to associate a predetermined confidence interval with the cluster centers;

for each clustered data array of the second plurality, to determine a best-matching cluster center and to check if the clustered data array is within said predetermined confidence interval of the best-matching cluster center;

if the clustered data array is within said predetermined confidence interval of the

best-matching cluster center, to archive an indicator of the best-matching cluster center and to discard the data array in question; or

if the clustered data array is within said predetermined confidence interval of the best-matching cluster center, to archive data items of the data array for those time slots in which the clustered data array is not said within said predetermined confidence interval.

17. (Currently Amended) An apparatus comprising:

a determining unit configured to determine a first cycle in the cyclic behavior and dividing the first cycle into multiple time slots;

a unit configured to determine multiple data arrays, each data array containing multiple data items such that each data item describes a variable of an entity in one time slot;

for each of the several entities, a unit configured to determine a specific magnitude parameter;

a scaling unit configured to scale the data arrays between entities such that the specific magnitude parameters are suppressed;

a training unit configured to train a clustering system with a first plurality of the scaled data arrays to determine a set of cluster centers; and

a unit configured to use the trained clustering system to cluster a second plurality of the scaled data arrays,

wherein the apparatus is used for processing data arrays that collectively describe cyclic behavior of at least one variable in several entities in a ~~physical process~~ telecommunication network to obtain the second plurality of the scaled data arrays, and using the second plurality of the scaled data arrays to determine at least one condition.

18. (Currently Amended) An apparatus comprising:

determining means for determining a first cycle in the cyclic behavior and dividing the first cycle into multiple time slots;

determining means for determining multiple data arrays, each data array containing multiple data items such that each data item describes a variable of an entity in one time slot;

for each of the several entities, determining means for determining a specific magnitude parameter;

scaling means for scaling the data arrays between entities such that the specific magnitude parameters are suppressed;

training means for training a clustering system with a first plurality of the scaled data arrays to determine a set of cluster centers; and

means for using the trained clustering system to cluster a second plurality of the scaled data arrays,

wherein the apparatus is used for processing data arrays that collectively describe cyclic behavior of at least one variable in several entities in a ~~physical process~~

telecommunication network to obtain the second plurality of the scaled data arrays, and using the second plurality of the scaled data arrays to determine at least one condition.

19. (New) The method of claim 1, wherein at least some of the entities in the telecommunication network are resources of the telecommunication network.

20. (New) The method of claim 19, further comprising using the scaled data arrays to determine a set of optimized operating parameters for a first resource of a telecommunication network and copying the optimized operating parameters to one or more second resources, wherein the first and second resources have different magnitude parameters.

21. (New) The method of claim 1, wherein the at least one variable includes a performance indicator which indicates a performance of the telecommunication network.

22. (New) The method of claim 1, further comprising detecting an anomalous situation in the telecommunication network by the trained clustering system.

23. (New) The method of claim 1, further comprising determining a pricing strategy in the telecommunication network by the trained clustering system.

24. (New) The method of claim 1, further comprising selecting candidate subscribers for service advertising in the telecommunication network by the trained clustering system.

25. (New) The method of claim 1, further comprising storing the second plurality of the scaled data arrays into a computer storage.